Alstead

X-A000(425), 14540M
X-A000(473), 14541J
14540W

Environmental Study
Categorical Exclusion

May 2007

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Environmental Study
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Introduction

During the weekend of October 9, 2005, portions of the southwestern region of New Hampshire received heavy rains in excess of eleven (11) inches during a period of approximately thirty (30) hours. The massive volume of rain caused rivers and streams throughout the region to swell above the 500-year flood stage. The flooding was particularly prevalent along the Cold River and Warren Brook in Alstead. This flooding caused damage to both property and infrastructure. One of the hardest hit portions of roadway was NH Route 123 between the Lake Warren dam and its intersection with NH Route 123A, approximately four (4) miles to the west (*Exhibits A & P*).

Following the flooding, the New Hampshire Department of Transportation (NHDOT) responded to the loss of transportation infrastructure by temporarily replacing portions of roadway and bridges and overseeing removal of flood debris under emergency conditions. The Department is in the process of designing and advertising, over a period of several years, projects to reconstruct the temporary repairs to the bridges and roadways in this area (*Exhibit A*). The general intent of these projects is to provide a uniform 11-4 typical section (11-foot travel lanes with 4-foot shoulders), eliminate the safety concerns associated with the temporary repairs, replace temporary structures (i.e. bridges, culverts, jersey barrier) with permanent structures, stabilize the roadway and embankment adjacent to Warren Brook and the Cold River and bring the roadway up to current safety standards. These projects are being undertaken in a stepwise schedule depending upon the severity of the existing deficiencies, as well as financial and other social and cultural considerations

The overwhelming desire of the Department is to restore a sense of transportation normalcy along NH Route 123 in Alstead as quickly as possible. By addressing problematic areas in a systematic approach, in close coordination with the Town as well as a host of Federal, State, regional and local resource agencies, the Department will be able to complete, in a timely manner, the rehabilitation of NH Route 123. This systematic approach has necessitated the need to divide the overall reconstruction into six separate construction efforts. Upon overall project completion, any remaining transportation deficiencies caused by the flood, will be abated by an up-to-date facility, enhanced green areas and the preservation of remaining cultural features.

In accordance with the National Environmental Policy Act of 1969 (42 USC 4332(2)(c)) as implemented in 23 CFR 771.117(d)(3), three separate Environmental Studies have been prepared using a systematic, interdisciplinary approach to assess the engineering considerations and environmental effects of this overall project. This categorical exclusion addresses three of the six Alstead construction efforts:

> Alstead, X-A000(425), 14540M: This project, scheduled to advertise in January 2009, is the overall upgrade project along NH Route 123 between Mill Hollow and downtown Alstead. The project area includes all locations along the corridor not covered by smaller, breakout projects. In addition, any environmental commitments made in the breakout projects that could not be incorporated into their design will be addressed by this overall project.

Alstead, X-A000(473), 14541J: This project, scheduled to advertise in June of 2007, involves improvements to the NH Route 123/ Griffin Hill Road/ NH Route 12A intersection, elimination of the one-way, signalized roadway section, the replacement of the bridge that carries NH Route 123 over Warren Brook and repair of the bridge that carries NH Route 123A over Warren Brook. This project is being advertised in advance of the overall project (14540M) as the safety considerations associated with temporary one-way traffic warrant an advanced construction timeframe. In addition to the narrow roadway, geometric deficiencies in the roadway alignment and profile are not sufficient for the posted speed limit along the remainder of NH Route 123.

Alstead, 14540W: This project, scheduled to advertise in August of 2007, involves the reconstruction of approximately 1,200 feet of NH Route 123A from the Vilas Pool Dam south to its intersection with NH Route 123. This project is funded by the Federal Emergency Management Agency (FEMA).

In order to address associated safety and financial deficiencies in a timely manner two construction efforts were advertised ahead of the above noted projects and were addressed in two previously prepared categorical exclusions. These categorical exclusions are as follows:

Alstead, X-A000(471), 14541H: This project involved the replacement of the temporary bridge that was installed over Warren Brook immediately following the flooding event. This project was constructed during the summer of 2006, while school was out, as the road needed to be closed during construction and the local detour along Camp Brook Road was not adequate or safe for school bus use. The roadway was reopened prior to the 2006-2007 school year.

Alstead, X-A000(472), 14541I: This project consists of the elimination of the temporary detour at the former NH Route 123/ Cobb Hill Road/ Cooper Hill Road intersection. It was advertised in advance of the overall project, as the temporary detour is approaching its useful life and the safety considerations associated therewith require a more immediate construction timeframe.

The single remaining project is located outside the limits of the five previously noted construction efforts. This project is considered to have stand-alone utility and therefore has been addressed in a separate categorical exclusion:

Alstead, X-A000(479), 14541K: This project is scheduled to advertise in January of 2008. The project involves the replacement or rehabilitation of the flood-damaged bridge that carries NH Routes 123 and 12A over Cold River.

In response to the devastation and loss of private property that occurred during the October 9, 2005 flooding, the State legislature passed a law (RSA 256) that provides financial assistance to property owners affected by the flooding for unmet needs. Property under this law is purchased at the *"…pre-flood assessed value less the total amount of financial aid that the current property owner*

received from any other source, such as insurance payments or state or federal disaster assistance." The purchase and relocation and/or demolition of these properties are being undertaken by the Department of Transportation, with State funds. Although the subject project does not require the purchase and demolition of any of these parcels, the construction contracts for these projects will include the demolition of several of the existing structures. For more information on these parcels, see **Exhibit B** at the end of the document.

Existing Conditions/Need

The floods of October 2006 severely damaged or completely destroyed sections of NH Routes 123, 123A and 12A. In the weeks following this event, the Department reconstructed multiple sections of roadway to restore through traffic and reconnect the community of Alstead with the surrounding area. This reconstruction effort was intended to temporarily restore traffic to the area and therefore did not address future safety and stability issues. The proposed action consists of three separate projects/construction efforts intended to permanently fix the subject roadways and update them to current safety standards (*Exhibit A*). The existing conditions and needs for each project vary and therefore have been described separately:

Alstead, X-A000(425), 14540M

This project upgrades NH Route 123 between Mill Hollow and downtown Alstead. It begins at the NH Route 123 junction with Pine Cliff Road and proceeds west approximately 2.7 miles to a point roughly 1,900 feet east of its intersection with NH Route 12A/Griffin Hill Road. The existing roadway is approximately 24 feet wide with an 11-1 typical roadway cross section (11-foot travel lanes with 1-foot paved shoulders). Several areas within the limits of this project were extensively damaged, requiring temporary structures to be constructed to restore through traffic. Due to both safety and economic concerns it was necessary to replace these structures in an accelerated manner prior to the construction of the 14540M project. As a result of their accelerated schedules these projects have been previously addressed by the Alstead 14541H and 14541I projects and therefore have not been included in this categorical exclusion.

The eastern portion of the project area (approximately 4,700 ft) consists of extremely steep topography and roadway geometry and subsequently was particularly vulnerable to damage during high water events. During the October 2005 flood event this section of roadway was severely damaged when the water levels in Warren Brook exceeded the capacity of both the Mill Hollow Dam and an upstream 6-foot box culvert (*Exhibit P, Pictures M-1 – M3*). These structures are located several hundred feet downstream from the outlet of Lake Warren and drain an area of approximately 5.2 square miles. Both the culvert and the dam are undersized in comparison to what is necessary to pass the 5.2 square mile drainage area during a 100-year flood event. As a result, the water levels in this area overtopped the roadway during the flood event and ran down the travel way for a length of approximately 1,100 feet before

returning to Warren Brook. The volume and velocity of water on the roadway washed away pavement and subsurface material making the roadway impassable.

Approximately 1,300 feet west of the Route 123/Pine Cliff Road intersection a 6-foot corrugated metal pipe carries Warren Brook beneath NH Route 123 (*Exhibit P, M-4 – M-6*). This undersized culvert likely became clogged and/or was unable to handle the volume of water and therefore the roadway was overtopped, washing out the roadway and its downstream embankment. Although this culvert was damaged during the event, the inlet was cleaned out and fill materials were replaced in order to quickly reopen the road. This culvert is also steeply pitched and the outlet perched several feet above the current streambed elevation.

Alstead X-A000(473), 14541J

This project involves improvements to the NH Route 123/ Griffin Hill Road/ NH Route 12A intersection, elimination of the one-way, signalized roadway section and the replacement of the bridge that carries NH Route 123 over Warren Brook. The Project begins approximately 1,900 feet east of the NH Route 12A/Griffin Hill Road intersection and proceeds west approximately 1.3 miles to a point roughly 650 feet west of the NH Route 123A intersection (*Exhibit P*). The existing roadway is approximately 24 feet wide with an 11-1 typical roadway cross section (11-foot travel lanes with 1-foot paved shoulders). This section of roadway is located in close proximity to Warren Brook, and as a result, much of the travel way was damaged or completely destroyed during the October 2005 flooding event. Given the need to quickly restore through traffic, multiple sections of the roadway were either temporarily repaired or completely reconstructed. Many of these temporary repairs do not meet current safety standards and are now showing signs of considerable deterioration, thus indicating a need for permanent reconstruction.

The eastern portion of the project is located along a relatively flat section of the roadway. This section contains a 16-foot long bridge (bridge #: 087/155) passing over Warren Brook approximately 700 feet west of the Griffin Hill/12A intersection (*Exhibit P, J-1*). This undersized structure is capable of passing a volume equal to that of approximately a 10-year storm. Given its undersized capacity the heavy waters clogged the bridge with debris causing the water to overtop the bridge and wash away both approaches. Warren Brook also flattens out in this area and as a result the high volumes of water during the flooding event overtopped the banks destroying several homes located on the northern side of the roadway and washing out the southern approach to the Griffin Hill Road Bridge (*Exhibit P, J-1*).

Within the eastern portion of the project, NH Route 12A converges with NH Route 123 opposite the Griffin Hill Road intersection. NH Route 12A approaches NH Route 123 at a steep downhill angle. This steep profile in conjunction with an adverse approach angle, and the close proximity, to Griffin Hill Road creates a considerable safety concern (*Exhibit P, J-3 – J4*).

The roadway within the central portion of the project is confined by Warren Brook to the north and a steep upward slope to the to the south. During the flooding event the waters of Warren brook undermined the roadway causing several sections to be nearly and/or completely destroyed. Reconstruction efforts were immediately undertaken by NHDOT and contracted forces to rebuild the roadway and return Warren Brook to its original stream channel. Large amounts of stone and gravel fill were utilized in addition to the construction of a 250-foot long retaining wall (*Exhibit P, J-8 – J-9*). Despite these efforts, it was unfeasible to reconstruct a 400-foot long section of roadway to maintain two-way traffic. As a result, a single lane was reconstructed to a width of approximately 18 feet and a system of alternating one-way traffic was implemented. These reconstruction efforts were intended to be temporary and therefore several sections are now showing signs of substantial deterioration (*Exhibit P, J-7*).

The western portion of this project contains the junction of NH Routes 123 and 123A. During the flooding event the waters of Warren Brook bypassed a bridge spanning 24 feet, located on NH Route 123A causing the southern approach to be destroyed. Adjacent to this intersection is the confluence of Warren Brook and the Cold River. The already high waters in the Cold River combined with those of Warren Brook caused damage to not only the roadway but adjacent properties as well (*Exhibit P, J-10 – J-11*).

Bridge number 073/163 is located on NH Route 123A approximately 175 feet north of its intersection with NH Route 123. This concrete box structure spans 24-feet across Warren Brook approximately 150 feet upstream from its confluence with the Cold River (*Exhibit P, W-1 – W-2*). The flow of Warren Brook bypassed this structure during the flooding event, resulting in damage to the wingwalls and banks to either side of the bridge. The original channel was re-established in the weeks following the event to allow for continued use of this existing structure. As the reconstructed banks and wingwalls are relatively unprotected, erosion has continued to progress to either side of this structure indicating a need for permanent stabilization. Erosion has also caused the streambed to drop below the invert elevation of the box threatening the stability of the entire structure.

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This FEMA funded project involves the reconstruction of approximately 1,200 feet of NH Route 123A from the Vilas Pool Dam south to its intersection with NH Route 123. The existing roadway is approximately 24 feet wide with an 11-1 typical roadway cross section (11-foot travel lanes with 1-foot paved shoulders). This section of roadway was damaged when large volumes of water flowing over the dam washed away the roadbed just below the dam. This section of roadway was temporarily re-established however, it is now showing signs of deterioration (*Exhibit P, W-3 – W-5*).

Throughout the entire length of all three projects, culverts, ditches, drainage structures, roadway embankments and even roadway substructures were damaged or completely wiped out during this event. As these components are essential to the integrity of the roadway, they were quickly replaced by NHDOT forces prior to reopening the road to through traffic. These rapid replacements

were intended to be temporary and therefore much of the engineering necessary to properly construct a roadway such as this was not implemented. This has necessitated the need to replace and/or reconstruct much of the work previously conducted by maintenance forces immediately following the flood event.

Proposed Action

In general, each project will seek to achieve the following improvements to conform to current safety standards:

1. Construct a uniform 11-4 typical roadway cross section (11-foot travel lanes, with 4-foot paved shoulders).
2. Improve drainage conveyance along the roadway by constructing 6-foot wide drainage ditches and stabilizing and perpetuating cross pipes throughout the project area.
3. Replace deficient guardrail to bring it up to current safety standards.

Each project has its own unique challenges and requirements as they relate to context sensitivity, the relationship between the roadway and adjacent natural and cultural resources and the deficiencies that exist along the roadway. While trying to achieve a uniform design along the entire roadway corridor, each project, listed below, will include the following, project-specific, improvements:

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1. Construct an 11-1 typical section (11-foot travel lanes, with 1-foot paved shoulders) within the heart of the Mill Hollow Historic District (from approximately Sta. 807+00 to Sta. 813+00). The construction of an 11-4 typical section would require impacts well outside the existing right-of-way and would have substantial impacts to contributing elements of the District.
2. Slope, drainage and construction impacts will be minimized within the heart of the Mill Hollow Historic District (from approximately Sta. 807+00 to Sta. 813+00) to avoid unnecessary impacts to the adjacent historic structures.
3. Installation of an overflow culvert adjacent to and bypassing the 6-foot box culvert and Mill Hollow Dam at approx. Sta. 809+50. The overflow structure will be constructed downhill from the Dam and will outlet near the bottom of the slope so as to dissipate the waters' energy prior to re-entering Warren Brook. The type and size of the structure will be evaluated and coordinated with the NH Division of Historical Resources, DES Wetlands Bureau, DES Rivers Management and Protection Program and NH Fish and Game Department to develop an alternative that is sensitive to the brook and its associated fishery.
4. Replace the 6-foot wide by 125-foot long corrugated metal pipe culvert that carries Warren Brook under NH Route 123 at approx. Sta. 799+00. The type and size of the replacement structure will be evaluated and coordinated with the DES Wetlands Bureau, DES Rivers Management and Protection Program and NH Fish and Game Department to develop an alternative that is sensitive to the brook and its associated fishery.

5. Replace the 10-foot wide by 55-foot long corrugated metal pipe culvert (bridge) that carries Warren Brook under NH Route 123 at approx. Sta. 754+69. The type and size of the replacement structure will be evaluated and coordinated with the DES Wetlands Bureau, DES Rivers Management and Protection Program and NH Fish and Game Department to develop an alternative that is sensitive to the brook and its associated fishery.

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1. Replace the 16-foot long bridge that spans Warren Brook to the east of the Griffin Hill Road intersection at approx. Sta. 659+00 (Bridge #: 087/155). The bridge will be replaced with a larger structure(Bridge #: 087/156) that will pass a 100-year flooding event (Q100). The new structure will be constructed approximately 65 feet to the north of the existing bridge. This alignment shift will allow through traffic to be maintained on the existing structure during construction and will improve the safety of the roadway by softening the existing curve. The type and size of the structure will be evaluated and coordinated with the DES Wetlands Bureau, DES Rivers Management and Protection Program and NH Fish and Game Department to develop an alternative that is sensitive to the brook and its associated fishery.
2. Realign the roadway to the north between stations 649+00 and 662+00. Realignment will improve the safety of the NH Route 12A/ Griffin Hill Road intersection and allow the new bridge at Sta. 659+00 to be constructed adjacent to the existing structure prior to removal, allowing through traffic to be maintained.
3. Stabilize the roadway embankment between approx. Sta. 628+00 and 635+00 by placing Class A stone fill (riprap) at a 1 ½:1 slope from the toe-of-slope to approximately 3 feet above the preconstruction 100-year water surface elevation (Q100). Above this point, a 1 ½:1 slope will be constructed with Class B stone fill and covered with humus and a seed mix to allow for revegetation and to enhance the naturalization of the embankment.
4. Stabilize the roadway embankment between approx. Sta. 642+00 and 649+25 by placing Class A stone fill (riprap) at a 1 ½:1 slope from the toe-of-slope to approximately 3 feet above the Q100. Above this point, a 2:1 slope will be constructed and covered with humus, seed mix and landscaping to allow for revegetation and to enhance the naturalization of the embankment.
5. Reconstruct the roadway between approx. Sta. 627+50 and 632+50 to re-establish two-way traffic and stabilize the roadway.
6. Reconstruct the northern roadway embankment between approx. Sta. 604+50 and 606+00 as well as 609+00 and 900+75 by placing Class B stone fill (riprap) at a 1 ½: 1 slope and covering it with humus and seed mix above the Q100 to allow for revegetation and to enhance the naturalization of the embankment.
7. The northern roadway embankment along NH Route 123 and NH Route 123A between approx. Sta. 606+25 and 900+75 will be covered above the Q100 with humus, seed mix and landscaping to allow for revegetation and to enhance the naturalization of the embankment.
8. Repair damage to the banks and wings on either side of Bridge 073/163 over Warren Brook by constructing a flared concrete wingwall extension to the existing in-line wing on the northeast quadrant. In order to prevent further erosion, stone fill will be added to the outside of all four wingwalls. Stone fill will be placed on the streambed to either side of the bridge to raise the streambed elevation to match that of the invert elevation.

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1. Reconstruct the roadway and the western embankment between approx. Sta. 907+50 and 910+50. The embankment will be established using a Class B stone fill (riprap) at a 1 ½: 1 slope and covering it with humus to allow for revegetation and to enhance the naturalization of the embankment. In order to prevent further collapse and provide sufficient support for the slope, a concrete block "retaining wall," will be constructed adjacent to the Cold River.

Alternatives to the Proposal

The following is a list of general alternatives evaluated for all three projects as well as those examined for each individual project. For the reasons listed below, these options were not chosen and final design progressed with the alternatives listed under the **Proposed Action** section.

General Alternatives

"No Build"

The "No-Build" alternative is not considered feasible and prudent, as it does not address the geometric deficiencies, stability concerns and safety concerns associated with the existing roadways and the temporary repairs. Selection of this alternative would require continued use of a substandard roadway. The safety concerns associated with the alternating one-way section of roadway would not be addressed and the temporary signals would remain in place for an indefinite amount of time. In addition, the impacts associated with the proposed action are not of a magnitude to warrant the selection of this alternative.

New Location Alternatives

These alternatives would relocate the NH Route 123 and NH Route 123A roadway corridors in order to bypass the problems associated with the existing roadways. New location alternatives would potentially result in impacts to National Register-eligible properties and would have far greater impacts to undeveloped forestlands, farmlands, streams and wetlands. Moreover, these alternatives would substantially increase project costs and the additional property and right-of-way impacts would likely raise serious public concerns. The existing safety concerns along both sections of roadway would still need to be addressed due to the geometric deficiencies and safety considerations detailed above. As such, the new location alternative was not selected for any of the three roadway corridors.

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Clear Span Structure

The construction of a structure on NH Route 123 that completely spans Warren Brook to replace the 6-foot concrete box culvert in the area of the Mill Hollow Dam was conceptually considered early in the design of the project. A complete span would be designed to pass the 100-year flooding event, thus reducing the possibility of future flooding. Bridge structures such as this, however, require the construction of footings and large abutment structures. Given the close proximity of this structure to the Mill Hollow Dam and Mill, construction of a clear span would likely have required a substantial increase in impacts to several historic structures located within the overall Mill Hollow Historic District, as well as increased wetland impacts. Due to the anticipated environmental and cultural impacts in addition to the cost of such a structure, it was determined that this alternative is not prudent. As such, it was not selected.

Uniform Lane Width

Typically, lane widths are proposed for a project based upon design speed, roadway functional classification, winter maintenance needs and other safety considerations. Based upon the need to update the current lane widths, NHDOT chose to pursue a uniform 11-4 typical roadway cross section (11-foot travel lanes, with 4-foot paved shoulders). These widths are usually maintained throughout the length of the project. Maintaining an 11-4 typical cross section would have required substantial property acquisitions and/or easements within the confines of the Mill Hollow Historic District. As such, an 11-1 typical cross section was chosen to reduce the impacts to cultural resources to the maximum extent practicable while still attempting to meet the project's need to provide a minimally acceptable transportation corridor.

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Southern Roadway Realignment

Several sections of NH Route 123, between stations 627+00 and 650+00, abut directly against Warren Brook. Given the close proximity of Warren Brook to the travel way, NHDOT investigated shifting the alignment of this section of the roadway to the south, away from the brook and its associated banks. The southern side of the existing roadway contains a steep upward slope that abuts up against the existing roadway structure. A relatively minor shift of approximately 5-10 feet would require this slope to be excavated and re-stabilized several hundred feet uphill. This alternative would result in far greater impacts to undeveloped forestlands and disturb a currently stabilized slope. Moreover, this alternative would substantially increase project costs and the additional property and right-of-way impacts would likely raise serious public concern. As such, this alternative was not chosen.

On Alignment Bridge Rehabilitation

Bridge number 087/155 is located on NH Route 123 and passes over Warren Brook approximately 700 feet west of its intersection with Griffin Hill Road/12A. As this bridge was not substantially damaged during the October flooding event, NHDOT's initial proposal was to rehabilitate the structure and its subsequent approaches. However, it was found that this structure is severely undersized and can only adequately pass a 10-year flood event. In order to update this crossing to meet the current hydraulic needs and accommodate for the wishes of local public officials, this bridge will be replaced by one adequately sized to handle a 100-year flooding event.

On Alignment Bridge Replacement

The complete on alignment replacement of bridge number 087/155 was considered early in the design of the project. Construction of this alternative would have replaced the existing structure with a larger one capable of accommodating for a 100-year flooding event. This design would be similar to that of the proposed action except the structure would have been built on top of the existing roadway alignment. This alternative would have required either the fabrication of a temporary bridge to divert traffic around the work site or complete closure of the road during construction. Due to the additional societal impacts and safety concerns associated with a detour and the additional costs associated with a temporary structure this alternative was dismissed in favor of the preferred alternative.

123A Bridge Replacement

The complete replacement of bridge 073/163 which caries NH Route 123A over Warren Brook was conceptually examined during the early stages of design. This alternative would involve removing the existing box structure and replacing it with a larger full span structure to increase the hydraulic capacity of the structure. As the current structure is in adequate condition and was not substantially damaged during the flooding event, it was determined that the increased costs associated with the construction of this structure would be considerable and therefore this alternative was not chosen.

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Eastern Roadway Realignment

Several sections of NH Route 123, between stations 907+50 and 914+00, abut directly against the Cold River. Given the close proximity of the Cold River to the travel way, NHDOT investigated shifting the alignment of this section of the roadway to the east, away from the river and its associated banks. The eastern side of the existing roadway contains a steep upward slope that abuts the existing roadway structure. A relatively minor shift of approximately 5-10 feet would require this slope to be excavated and re-stabilized for a substantial distance uphill. This alternative would result in far greater impacts to undeveloped forestlands and disturb a currently stabilized slope. Moreover, this alternative would substantially increase project costs and the additional property and right-of-way impacts would likely raise serious public concerns. As such, this alternative was not chosen.

Evaluation of Environmental Effects

The effects of the project relative to the following social, economic, natural and cultural resources/issues have been reviewed. Resources/issues, which are not discussed in the body of the report, were investigated, however no impacts were evident. As such, these resources/issues are omitted from this environmental documentation. The resources and issues deemed applicable for this project are indicated in **bold** type in the table on the following page.

Resources/Issues

Social/ Economic		Natural	Cultural
Safety	Farmlands	**Water Quality**	**Historical**
Transportation Patterns	**Community Services**	**NPDES, Stormwater Mgt.**	**Archaeological**
Air Quality	Energy Needs	**Wetlands**	Stonewalls
Noise	**Utilities**	**Surface Water**	**Aesthetics**
Displacements	**Environmental Justice**	Groundwater	
Contaminated Properties		**Floodplains**	
Neighborhoods		**Wildlife**	
Business Impacts		**Fisheries**	
Land Acquisition		**Endangered Species**	
Land Use		**Natural Communities**	
Tax Base		Wild & Scenic Rivers	
Recreation		**Stream Rechannelization**	
Public Lands		**NH Designated Rivers**	
Construction Impacts		Forest Lands	
		Costal Zone	

Safety/ Transportation Patterns/ Community Services

The proposed projects involve permanently repairing several sections of NH Routes 123, 123A and 12A as a result of the damages caused by the floods of October 2005. Included in these repairs will be restoration of two-way traffic to a section currently operating under a system of alternating one-way traffic. The intersection of NH Routes 123, 12A and Griffin Hill Road will be updated by improving the approach angles and sight distance. The projects will also involve updating the roadway to current safety standards by constructing 11-foot travel lanes with 4-foot shoulders and installation of new guardrail and drainage. The improvements will eliminate poor sight distance at the intersection and provide a roadway that is consistent with current safety standards. Upon the completion of work, transportation patterns will be returned to the pre-flood condition with unimpeded through traffic motions along both sections of NH Route 123 and NH Route 123A.

NH Routes 123 and 123A are classified as a Rural Major Collector and a Rural Minor Collector, respectively. As a result, these roadways serve as the main motor vehicle connections

between points to the north and east of Alstead Village. In addition to several businesses, Alstead Village houses the Town Hall, Police Station, Fire Station and Vilas Middle School. This requires town officials, emergency response vehicles and school buses to travel on both roadways on a daily basis. Construction of this project will allow the continued safe passage of such community service vehicles providing assistance to the general public.

It is anticipated that through traffic will be maintained or temporary detours with appropriate signage will be implemented throughout construction, it is not anticipated that these facilities will be negatively impacted during construction of this project.

Land Acquisition/ Displacements/ Tax Base

Construction of the proposed highway improvements will require the complete acquisition of two unoccupied properties (Parcels 70 & 72). Both properties contained structures that were completely destroyed during the flooding event. In addition to these complete acquisitions the projects will also require approximately 282,225 ft^2 (6.48 acres) of partial acquisitions, 410,118 ft^2 (9.41 acres) of permanent easements and 82,953 ft^2 (1.90 acres) of temporary easements outside the limits of the existing right-of-way (*Exhibits C*). The department will obtain the necessary acquisitions, easements and rights of entry prior to the commencement of construction. The subject partial acquisitions and easements are mainly associated with embankment stabilization, drainage improvements and temporary construction needs and therefore are not expected to adversely affect their associated properties.

The total estimated land area in the town of Alstead is approximately 39.4 mi^2. Total permanent impacts are approximately 0.02 mi^2, 0.05 % of the total land area in this town. As such, it is not anticipated that this project will cause a change in land use in the project area, nor is it expected to have a substantial effect on the tax base of the town of Alstead.

In response to the devastation and loss of private property that occurred during the October 9, 2005 flooding, the State legislature passed a law (RSA 256) that provides financial assistance for unmet needs to property owners affected by the flooding (Alstead Buyout Program). Acquisition of these properties is not necessary for the construction of the above noted projects. For logistical and economic reasons the relocation and/or demolition of these properties is being undertaken by NHDOT, with State funds only, in conjunction with several of the reconstruction projects. For more information on the parcels included in the Alstead Buyout Program, see **Exhibit B** at the end of the document.

Contaminated Properties

During the flooding events, potentially contaminated debris and materials were carried into and through the project area. It is not anticipated that proposed construction activities will involve any contaminated materials associated with the flooding event. An Initial Site Assessment (ISA) for this

project was completed on December 6, 2006 and indicated the presence of four properties adjacent to the project area (*Exhibit E*).

Two parcels have been identified through public official and landowner contact, as being potentially contaminated. Parcel 87, was damaged during the flooding event, resulting in the release of several hundred gallons of #2 heating oil in the basement of the structure. Parcel 90, a former gas/repair station was completely destroyed during the flooding event. This site contained underground storage tanks which were damaged, destroyed and/or removed during or immediately following the flooding event. Although remediation of both these sites was conducted in the months immediately following the flooding event, the potential for residual contamination on these properties remains.

A review of the NHDES One Stop database indicated the presence of two former remediation sites within or adjacent to the project area. Parcel 80 (Bates Automotive, formerly Sunset Motors), was discovered on June 13, 2001 as containing groundwater arsenic levels in excess the Ambient Groundwater Quality Standard (AGQS). A Certificate of No Further Action was issued by NHDES on April 8, 2004. The second site is the Vilas Middle School, located several hundred feet to the west of the project limits. This site was identified on September 21, 1993 as containing a Leaking Underground Storage Tank (LUST). Both sites have undergone remediation by NHDES and have since been listed as closed in the database system and therefore are not expected to be of concern in relation to this project.

All four of the potentially contaminated sites listed above were examined during a field review conducted on April 26, 2006. This field review did not identify the presence of contamination on these properties or within the limits of construction for all three projects. As the NHDES files have been listed as "closed" and a field review did not indicate the presence of contamination within the project limits, it is not expected that any materials of this sort will be encountered during the construction of this project. If any indications of contamination are discovered during construction, NHDOT will halt operations in this area and address the situation as appropriate prior to resuming operations.

For logistical and economic reasons the relocation and/or demolition of the properties purchased under the Alstead Buyout Program (RSA 256) is being undertaken by NHDOT, with State funds only, in conjunction with several of the reconstruction projects. Although there were no visual signs of contamination, on any of these properties, it is suspected that some may contain asbestos containing materials (ACM). As is standard with all Department demolition projects, all necessary measures will be taken to abate asbestos and/or other household hazards at this site prior to demolition. For more information on the parcels included in the Alstead Buyout Program, see **Exhibit B** at the end of the document.

Land Use/Public Lands & Recreation

NH Routes 123 and 123A are classified as a Rural Major Collector and a Rural Minor Collector, respectively. These roadways serve as the local scenic roads for several small New England

towns. The project area is typical of rural New Hampshire with a mix of residential, agricultural, commercial and civic uses, surrounded by forestlands and numerous historical resources.

The rural nature of this corridor provides ample recreational opportunities. Both roadway corridors are located adjacent to the Cold River, Warren Brook and Vilas Pool. These facilities provide ample opportunities for fishing, wildlife observation, walking and bicycling. This project includes the installation of wider shoulders than existed prior to the flooding event. These wider shoulders will allow for safer pedestrian and bicycle traffic. Additionally the intent of this project is to reconstruct the roadway to a pre-flood condition updated for safety and therefore is not expected to affect the use of such recreational activities.

The Conservation Land Stewardship (CLS) Program is responsible for monitoring and protecting the conservation values of conservation easement lands in which the State of New Hampshire has invested. The proposed action has been reviewed by the Office of Energy & Planning, CLS Program Coordinator and it was determined that there are no CLS parcels, local or state-held, in close proximity to the project area *(Exhibit F)*.

Section 6(f) is an article of the Federal Land and Water Conservation Fund Act of 1964, which provides financial assistance for the acquisition and development of public lands to create parks and open spaces; protect wilderness, wetlands and refuges; preserve wildlife habitat; and enhance recreational opportunities under the Land and Water Conservation Fund (LWCF). Any land acquired or improved with these funds is subject to a body of federal regulations under the purview of the US Department of the Interior (USDOI). Pursuant to these regulations, any land subject to Section 6(f) cannot be "converted" to another use for purposes inconsistent with the Act without the approval of the USDOI and without being replaced with other land that is of equal use and value to the land proposed for conversion. Based upon a review of their LWCF files, the Department of Resources and Economic Development (DRED) has advised that there are no Section 6(f) parcels located within the 14540M and 14541J project areas *(Exhibit G)*.

DRED files did indicate the presence of one property located within the project limits of the 14540W project. The subject LWCF property is the Vilas Pool property (Parcel 101) (LWCF project number 33-00105) located at the northern end of the 14540W project limits. The proposed work in the vicinity of the Vilas Pool property was reviewed with DRED, and it was determined that the work as described would not require use or access to this property for more than 6 months and therefore is consistent with Section 6(f) of the Federal Land and Water Conservation Act of 1964 (*Exhibit H)*.

Air Quality

The proposed project is located within an area of the State that is in attainment with respect to the National Ambient Air Quality Standards (NAAQS) for ozone and all other criteria pollutants (CO, NOx, VOCs, and PM10). The proposed work is not considered a "Regionally Significant Project" as defined in the final Transportation Conformity rules (40 CFR 93.101) or in those rules adopted by the New Hampshire Department of Environmental Services in accordance with the interagency consultation provisions required by 40 CFR 93.105. When completed, the project is not expected to

result in significant air quality impacts or contribute to violations of the NAAQS. Consequently, this project is exempt from the conformity requirements of the Clean Air Act Amendments of 1990.

Though exempt from the requirements of the Clean Air Act, the National Environmental Policy Act also requires consideration of the project's impact on air quality. The proposed improvements will shift the roadway slightly away from Warren Brook, however the proposed improvements will reconstruct existing facilities on essentially the same alignment (*Exhibit D*). The proposed improvements will not increase capacity or generate additional traffic, and when completed, the project will not significantly alter existing traffic patterns within the area. Traffic volumes are low and the conditions that contribute most significantly to the formation of elevated CO concentrations are not present. Therefore, as previously stated, the project is not expected to have an adverse impact on air quality.

Noise

Traffic through the project area is relatively light (about 1,000 to 1,900 vpd). Completion of this project will not cause a change in existing traffic noise. Construction activities will temporarily increase noise due to the use of heavy equipment. However, these noise levels are expected to return to normal after the project has been completed.

Utilities

The proposed project requires the relocation of aerial utility lines and power poles. Disruption to service, if any, will be kept to an absolute minimum. The following utility companies have been identified within the project area:

SERVICE	LOCATION
National Grid (Electric)	Aerial
Verizon (Telephone)	Aerial
Adelphia/Comcast (Cable TV)	Aerial

Business Impacts

Within the limits of this project there are four businesses, Breshears Garden Center, Bates Automotive, Glass and Aluminum Construction Services and J. Rowan Enterprises (Kmiec's Garage). Kmiec's Garage is currently out of operation as the structure was completely destroyed during the flooding event. It is not expected that upon completion, this project will negatively impact the operation of any of these businesses. Temporary disruption of traffic into and out of these active businesses will be kept to a bare minimum as to allow continued operation of these facilities.

Multiple additional businesses are located outside the project area in Alstead Village. As through traffic will be maintained or temporary detours with appropriate signage will be implemented

throughout construction, it is not anticipated that these facilities will be negatively impacted during construction of this project.

Environmental Justice

Executive Order 12898, enacted in 1994, requires that an environmental justice evaluation be conducted for all transportation projects that are undertaken, funded or approved by the Federal Highway Administration to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, and social and economic effects on minority populations and low income populations. The environmental justice review for the proposed action shows that adverse effects resulting from this project are unlikely (*Exhibit I*). As such, this project complies with Executive Order 12898.

Wetlands

There are several wetlands within the limits of work that will be impacted by the proposed construction. Dredge and fill activities will be required within these areas, which are under the jurisdiction of the Department of Environmental Services (DES) Wetlands Bureau and the US Army Corps of Engineers (ACOE). Anticipated impacts for the three projects include 25,240 ft^2 of permanent impacts within DES & ACOE jurisdiction and an additional 21,415 ft^2 of permanent bank impacts within DES jurisdiction. The Department's Bureau of Environment (BOE) delineated all wetland resources within the limits of the project. They were delineated based on the 1987 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, produced by the ACOE, Wetlands Research Program. In addition, the wetlands were classified utilizing the *Classification of Wetlands and Deepwater Habitats of the United States*, Lewis M. Cowardin, US Department of the Interior, Fish and Wildlife Service. The following classified wetlands have been identified within the project areas.

1. R4SB3: Riverine, Intermittent, Streambed, Seasonally Flooded;
2. R3UB1H: Riverine, Lower Perennial, Unconsolidated Bottom, Cobble-gravel, Permanently Flooded;
3. PEM1E: Palustrine, Emergent, Persistent, Seasonally Flooded Saturated;
4. PEM/SS1E: Palustrine, Emergent/ Scrub-Shrub, Persistent, Seasonally Flooded Saturated;
5. PEM/FO1E: Palustrine, Emergent/ Forested, Broad-Leaved Deciduous, Seasonally Flooded/ Saturated

A Dredge and Fill application will be submitted to the DES Wetlands Bureau for this project. The proposed impacts meet the criteria established for a "Major" impact Wetlands and Non-Site Specific Permit administered by the DES Wetlands Bureau. The 14541J project was reviewed by the DES Rivers Management and Protection Program (RMPP), DES Wetlands Bureau and the NH Fish & Game Department (NHF&G) at a meeting on December 8, 2006. Everyone agreed that the proposed action was prudent and appropriate from an environmental standpoint. The projects were also reviewed by ACOE, NHF&G, US Fish and Wildlife Service (USF&WS), Environmental Protection Agency (EPA), NH Office of Energy and Planning (NHOEP), and Federal Highway Administration

(FHWA), among others, at the March 15, 2006, August 23, 2006, October 18, 2006 and November 15, 2006 Natural Resource Agency coordination meetings. It is anticipated that these projects will qualify for a State Programmatic General Permit administered by the ACOE. See the **Surface Waters/ Water Quality/ NH Designated Rivers** section for more information.

Although proposed impacts exceed the criteria established at Env-Wt PART 803 "Compensatory Mitigation Requirements," for mitigation, it was previously established during a NHDOT and DES Wetlands Bureau field review on November 8, 2006, and subsequent Natural Resource Agency Meetings, that the Department would not be required to mitigate minimized wetland impacts associated with the repair of flood damaged portions of NH Route 123.

Surface Waters/ Water Quality/ NH Designated Rivers/ Stream Rechannelization

The project involves impacts to both Warren Brook and the banks of the Cold River. The Cold River, of which Warren Brook is a tributary, is a NH Designated River. The New Hampshire Rivers Management and Protection Program (RMPP) was established in 1988 with the passage of RSA 483 to protect certain rivers, called designated rivers, for their outstanding natural and cultural resources. The program is administered by New Hampshire DES. The designated portion of Cold River is from the outlet of Crescent Lake Dam in Acworth to its confluence with the Connecticut River in Walpole. Although portions of the three roadway improvement projects lie outside the ¼ mile buffer of influence of the Act, the entire project area does lie within the Cold River watershed. The Department has been coordinating this and all improvements along flood damaged portions of NH Route 123 in Alstead with both the Cold River Local Advisory Committee (CRLAC) and the DES RMPP to ensure that the project not only meets transportation needs, but is also sensitive to the aquatic ecosystem and is consistent with the goals and objectives of the Cold River management plan (*Exhibit O*).

To this end, the Department, along with the NHF&G, Natural Resource Conservation Service (NRCS), and a Clean Water Act grant through NHDES, has provided financial assistance for the development of a restoration plan for Cold River, Warren Brook and Bower's Brook. The study is entitled: Restoration Plan for Cold River, Warren Brook and Bowers Brook (*The Restoration Plan*). In addition to the financial contribution to *The Restoration Plan*, the Department is working closely with the funding agencies and the consultant to ensure that the proposed highway work will allow for the implementation of the recommendations made in *The Restoration Plan* wherever possible and practicable. One of the recommendations in The Restoration Plan is to restore the bed elevation of Warren Brook, by raising it approximately three (3) feet downstream from Griffin Hill Road between Sta. 628+50 and 631+50 and between Sta. 642+00 and 649+25. As a result, the proposed armoring and placement of vegetation (Class 'A' Stone, Class 'B' stone and landscaping) along the embankment has been adjusted by three (3) feet relative to the Q100 elevation. Above this raised Q100, a 2:1 slope will be constructed with humus and seed mix to allow for revegetation and to enhance the naturalization of the embankment.

Stabilization is also proposed along the banks of the Cold River between Sta. 604+50 and 610+00 and between Sta. 907+50 and 910+50. These slopes will be stabilized using class B stone fill

(riprap) at a 1 ½: 1 slope and covered with humus and seed mix to allow for revegetation and to enhance the naturalization of the embankment.

To minimize the potential for erosion and sedimentation increases in the Cold River, Warren Brook and downstream wetland systems during construction, the contractor responsible for the work will be required, as a contract provision, to prepare a Storm Water Pollution Prevention Plan prior to the commencement of construction activities.

Wildlife/ Fisheries/ Endangered Species/ Natural Communities

The proposed action has been reviewed by the USF&WS and the NH Natural Heritage Bureau (NHNHB) for the presence of federal or state, listed or proposed, threatened or endangered species, or other species of special or exemplary status. In a letter dated December 29, 2005 NHNHB responded that they have no recorded occurrences for sensitive species near this project area (E*xhibit J*). In a letter dated January 26, 2006, the USF&WS responded that based on currently available information, no species or habitats under the jurisdiction of the USF&WS were identified within the project area (*Exhibit K*).

The Magnuson-Stevens Fishery Conservation and Management Act requires the federal government to identify Essential Fish Habitat (EFH) and make conservation recommendations to agencies whose actions could damage it. The Cold River is an EFH for Atlantic Salmon (*Salmo salar*). According the NHF&G, Warren Brook, a tributary of Cold River, is an important fishery for Atlantic Salmon and Eastern Brook Trout (*Salvelinus fontinalis*). Although Warren Brook is not considered EFH, the proposed projects were reviewed with the NH Wetlands Bureau (NHWB), DES RMPP and NHF&G on December 8, 2006 as well as at multiple Natural Resource Agency meetings to ensure that the design was sensitive to the aquatic resources and fisheries. The Department has been, and will continue to coordinate with National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service as the project proceeds. See the **Proposed Action** section for more information and the **Coordination and Public Participation** section for a list of meeting dates.

Floodplains/ Floodways

Following the flooding that occurred during October 2005, the US Geological Survey (USGS) completed a post-flood study, entitled Flood Study of Warren Brook in Alstead and Cold River in Alstead, Langdon, and Walpole, New Hampshire, for a future update of the Flood Insurance Rate Maps (FIRM) in Alstead. On September 6, 2006 the Department met with NH Office of Energy and Planning (NHOEP) Bureau of Emergency Management (BEM), the Federal Emergency Management Agency (FEMA), and the US Geological Survey (USGS) to determine the appropriate roadway design in floodplain areas given the devastation and changes that occurred during the flooding events. It was determined at this meeting that NHDOT would not be required to provide floodplain mitigation, however the information found in post-flood survey data from USGS should be used to determine the location of post-flood floodplains and the estimated fill required in floodplains. Following design, the Department will provide USGS with the roadway design and flood information to incorporate into the

flood model for a future update of the FIRM. NHOEP-BEM, USGS and FEMA agreed that this would be an appropriate approach to address flood concerns in this area.

As proposed, the 14541J project will require the placement of additional fill material within the 100-year floodplain (Zone A) of Warren Brook between approx. Sta. 604+50 and 610+00, Sta. 628+50 and 631+50 as well as Sta. 642+00 and 649+25 by placing Class A stone fill (riprap) at a 1 ½: 1 slope to stabilize the slope. Realignment of the roadway in the area of the NH Route 12A/ Griffin Hill Road will also require roadway fill material to be placed partially within the 100-year floodplain between approximate Sta. 649+00 and 662+00. Based upon the cross sections determined in the Flood Study of Warren Brook in Alstead and Cold River in Alstead, Langdon, and Walpole, New Hampshire, it is anticipated that this project will require the placement of approximately 1,700-2,000 cy of fill within the floodplain in order to realign the roadway to the north between stations 649+00 and 662+00.

A review of the pre-flood National Flood Insurance Rate Map (FIRM) for the Town of Alstead, NH (Community Number 330020B) indicates that all three projects are partially located within the area of the 100-year flood without base flood elevations determined (Zone A) *(Exhibit L)*. Following the completion of this project the NHDOT roadway design and floodplain fill will be incorporated into the USGS flood model for use by FEMA in developing the next Flood Insurance Rate Mapping (FIRM) in Alstead. The floodplains in this area are unnumbered A zones.

The Department has been coordinating, and will continue to coordinate with OEM-BEM and FEMA as the project proceeds. The Emergency Management Director of Alstead was notified of the proposed project on December 27, 2005 and did not respond with any objections to the proposed project.

Cultural Resources

Since the flooding that occurred during the fall of 2005, both architectural history and archaeological surveys have been underway to determine National Register-eligible resources along the affected portions of NH Route 123 and NH Route 123A in Alstead. Based on these surveys, the project area contains sites that are both historically and/or archaeologically sensitive. The Department has been coordinating with the NH Division of Historical Resources (NHDHR) and FHWA to determine how these resources might be affected by the proposed action. In addition, the Department has maintained communication with the Town of Alstead throughout the design process.

The easternmost 4,700 feet of the project area is included within the Mill Hollow Historic District. Within this District, parcels 1 through 14 are located within the limits of the project area. All 14 parcels are contributing elements to the larger Mill Hollow Historic District (*Exhibit D*). These 14 parcels have a combined total area of approximately 315.34 acres of which this project is expected to require a total of approximately 0.20 acres (0.055%) of permanent acquisitions and 2.83 acres (0.76%) of permanent easements (*Exhibit C*). The majority of these impacts are strip acquisitions located along forested sections of the roadway, removed from the structures associated with the District. In order to minimize impacts directly adjacent to several structures within the Mill Hollow District, a lane

configuration containing 11-foot travel lanes and 1-foot shoulders (11-1 typical) has been designed between Sta. 807+00 and Sta. 813+00.

An overflow culvert will be installed adjacent to and bypassing the 6-foot box culvert and Mill Hollow Dam at approx. Sta. 809+50. Two properties (Parcels 4 and 6) are located in the immediate vicinity of the proposed overflow culvert, and have been identified as individually eligible for the National Register of Historic Places. The installation of the overflow structure is intended to protect the roadway and prevent future flooding and damage to both of these historic properties (*Exhibit N*). In order to prevent damage to these and other historic structures, vibration monitoring will be conducted during all phases of construction in the buildings located in close proximity to the roadway between stations 807+00 and 813+00.

The western end of the project is located within the confines of the Alstead Village National Register Historic District. The westernmost section (2,000 feet) of the NH Route 123 project area is located in or adjacent to this District as well as the entire length of the NH Route 123A project area (1,500 feet) (*Exhibit D*). Within the project limits a total of 5 parcels (87, 92, 93, 95 and 101) have been identified as contributing elements to this District. Parcel 87 is the only property which has been determined to be individually eligible for the National Register of Historic Places. These 5 parcels have a combined total area of approximately 37.55 Acres of which this project is expected to require a total of approximately 0.02 Acres (0.053%) of permanent acquisitions and 0.68 Acres (1.8%) of permanent easements (*Exhibit C*).

Contained within the Alstead Village National Register Historic District is one archeological site between Sta. 907+00 and 910+50. This site is located directly beneath the existing travel way and is the location of the former Tool Edge Factory. As this project will involve disruption of this resource, it was agreed by NHDHR and NHDOT that an archeologist qualified under 36 CFR 61, would be hired to monitor construction activities within this area.

Three additional properties, 63, 64 and 99, have been identified as potentially eligible for the National Register of Historic Places (*Exhibit D*). These parcels are located outside the confines of either of the previously noted Historic Districts. These three parcels have a combined total area of approximately 19.37 acres of which no acquisitions and 0.05 acres (0.29%) of permanent easements will be obtained as a result of this project (*Exhibit C*). .

Effects on historic and archaeological properties were determined by the NHDHR, FHWA and NHDOT based on the Section 106 review process established by the National Historic Preservation Act of 1966 and outlined in 36 CFR 800.9. During Cultural Resource Agency Coordination meetings on December 1, 2005; February 9, 2006; April 13, 2006; June 1, 2006; August 3, 2006; September 14, 2006 and November 2, 2006, it was agreed that the construction of the proposed project would have *No Adverse Effect* on the above noted Districts and individual properties (*Exhibit N*). Furthermore, it was agreed by all parties that this project would not have a substantial impact on Section 4(f) resources and therefore would qualify for a *de minimis* impact finding in accordance with Section 6009(a) of the 2005 SAFETEA-LU transportaion program reauthorization (*Exhibit N*). Documentation of all of the above noted resources are available at the NH Division of Historical Resources.

Construction Impacts

During the construction of the above noted projects it is anticipated that there will be temporary increases in noise and dust levels within the project area. All standard measures will be employed to ensure such increases are minimized to the extent practicable and limited to the construction period.

Given the close proximity of the above noted projects to the Cold River and Warren Brook it is anticipated that there will be temporary and permanent impacts to surface waters and wetlands within the project areas. These impacts will be reviewed with the necessary natural resource agencies and the proper permits will be obtained prior to construction.

The project contractors will be required to prepare, as a contract provision, a stormwater pollution prevention plan prior to the commencement of construction activities. Utilizing Best Management Practices (BMPs), this plan will protect the integrity of the Cold River, Warren Brook and associated wetlands in the project area throughout the construction period. In addition, standard pollution prevention measures will be employed to assure all negative impacts are avoided and/or minimized to the maximum extent practicable.

Depending on the final design, construction of the Mill Hollow overflow culvert at approx. Sta. 809+50 and replacement of the 6-foot wide by 125-foot long corrugated metal pipe that carries Warren Brook under NH Route 123 at approx. Sta. 799+00 may require the implementation of a temporary detour route. The detour route around the project area is approximately 4 to 5 miles (unsigned) for local traffic and approximately 15 to 17 miles (signed) for through traffic. As traffic will be maintained in both directions leading to these structures, access to all properties will be maintained and the appropriate signage will be implemented throughout the duration of any detours.

With the exception of the potential detour listed above, through traffic shall be maintained during construction. Although traffic might need to run on gravel surfaces for short periods of time, access to all properties will be maintained throughout construction. Any temporary suspensions of through traffic will be held to an absolute minimum.

Coordination and Public Participation

Letters were sent to various Federal, State and local agencies, as well as the general public, requesting input on this project on the following dates:

Agency / Organization	Contact	Date Sent	Date Received
Town of Alstead			
Road Agent	David Crosby	12/27/2005	-
Fire Chief	Kim Kercewich	12/27/2005	-
Police Chief	Christopher Lyons	12/27/2005	-
Emergency Management Director	Joel McCarty	12/27/2005	-
Chair, Board of Selectman	William Moran	12/27/2005	-
Chair, Alstead Con. Comm.	Joy Nalevanko	01/17/2006	-

Chair, Planning Board	Peter Rhoades	12/27/2005	-
Southwest Region Planning Comm.	Timothy Murphy	12/28/2005	-
Cold River Local Advisory Committee	Debby Hinman	12/29/2005	1/10/2006, 4/27/2006
US Fish and Wildlife Service	Bill Neidermyer	12/28/2005	-
US Army Corps of Engineers	Frank Delgiudice	12/28/2005	-
(NOAA) Essential Fish Habitat	Mike Johnson	12/28/2005	-
NH DES Rivers Management & Protection	Jacquie Colburn	12/28/2005	-
NH DES Lakes Management & Protection	Steve Couture	12/28/2005	-
NH Fish & Game	Bill Ingham	12/28/2005	-
NH Fish & Game	John Magee	12/28/2005	12/29/2005
NH DRED, LWCF	Shari Colby	12/28/2005	1/9/2006
NH Natural Heritage Bureau	Heather Herrmann	12/28/2005	12/29/2005
NH Office of Emergency Management	Jennifer DeLong	12/28/2005	-
NH Office of Energy & Planning (CLS)	Steve Walker	12/28/2005	1/3/2006
NH DOT – HR (Environmental Justice)	David Chandler	12/28/2005	1/6/2006
NOAA National Marine Fisheries Service	Mike Johnson	11/30/2006	-

Meetings were held periodically throughout development of this and all associated projects, with various Federal, State and local agencies, as well as with the general public. Project review meetings were held on the following dates:

Date	Topic	Project
November 8, 2006	NH DES Wetlands Bureau field inspection	14540M, 14541J, 14540W
December 1, 2005	Cultural Resource Agency Meeting	14540M, 14541J, 14540W
January 24, 2006	Public Officials Meeting	14540M, 14541J, 14540W
February 9, 2006	Cultural Resource Agency Meeting	14540M
March 15, 2006	Natural Resource Agency Meeting	14540M, 14541J, 14540W
April 4, 2006	Public Informational Meeting	14540M, 14541J, 14540W
April 13, 2006	Cultural Resource Agency Meeting	14540W
June 1, 2006	Cultural Resource Agency Meeting	14540M
August 3, 2006	Cultural Resource Agency Meeting	14541J
August 23, 2006	Natural Resource Agency Meeting	14541J
September 6, 2006	NHOEP/ USGS/ FEMA Meeting	14540M, 14541J, 14540W
September 14, 2006	Cultural Resource Agency Meeting	14540M
October 18, 2006	Natural Resource Agency Meeting	14541J, 14540W
November 2, 2006	Cultural Resource Agency Meeting	14540M, 14541J, 14540W
November 15, 2006	Natural Resource Agency Meeting	14540M
December 8, 2006	DES/NHF&G Meeting	14541J
December 13, 2006	Public Hearing	14540M, 14541J, 14540W
May 16, 2007	Natural Resource Agency Meeting	14541J

A Public Hearing was held for this project on December 13, 2006. The Department has responded to all issues and questions from the hearing in the Report of the Commissioner (*Exhibit Q*).

Summary of Environmental Commitments

The following general environmental commitments have been made for all three projects.

1. Prior to the commencement of work, the contractor shall submit a stormwater pollution prevention plan specific to this project**.** The plan shall be approved by the Department and implemented and monitored as noted. **(Construction/ Environment)**

2. Precautions shall be employed to minimize noise and dust levels during the construction period, primarily for the abutting receptors located adjacent to the project area. **(Construction)**

3. Standard pollution prevention measures will be employed to assure all negative impacts are avoided and/or minimized to the maximum extent practicable. **(Construction)**

4. Although traffic might need to run on gravel surfaces for short periods of time, through traffic will be maintained whenever possible or temporary detours with appropriate signage will be implemented throughout construction. Access to all properties and functioning businesses shall be maintained throughout construction. **(Design/ Construction)**

5. Several NH DES hazardous waste Remediation Sites and potentially contaminated sites have been identified within a ¼ mile of the project site. Should any visual or olfactory indications of the presence of hazardous materials be encountered, the Bureau of Environment should be contacted immediately and construction in the immediate area discontinued until the situation is assessed. **(Construction/ Environment)**

Alstead, X-A000(425), 14540M

1. Slope, drainage and construction impacts shall be designed to minimize impacts within the heart of the Mill Hollow Historic District (Sta. 807+00 to Sta. 813+00). Lane configuration within this area will be limited to an 11-1 typical section to reduce impacts to adjacent historic structures and the surrounding historic district. **(Design/ Construction)**

2. An overflow culvert will be constructed adjacent to and bypassing the 6-foot box culvert and Mill Hollow Dam at approx. Sta. 809+50. The overflow structure will be constructed downhill from the Dam and will outlet near the bottom of the slope as to dissipate the waters energy prior to re-entering Warren Brook. **(Design/ Construction/ Environment)**

3. Vibration monitoring will be conducted during all phases of construction in historic structures located in close proximity to the roadway between stations 807+00 and 813+00. **(Design/ Construction/ Environment)**

4. The type and size of the replacement structure at approx. Sta. 799+00 will be evaluated and coordinated with the DES Wetlands Bureau, DES Rivers Management and Protection Program and NH Fish and Game Department to develop an alternative that is sensitive to the brook and its associated fishery. **(Design/ Environment)**

5. The type and size of the replacement structure at approx. Sta. 754+69 will be evaluated and coordinated with the DES Wetlands Bureau, DES Rivers Management and Protection Program

and NH Fish and Game Department to develop an alternative that is sensitive to the brook and its associated fishery.

Alstead X-A000(473), 14541J

1. The type and size of the replacement structure that spans Warren Brook to the east of the Griffin Hill Road intersection at approx. Sta. 659+00 (Bridge #: 087/156) will be evaluated and coordinated with the DES Wetlands Bureau, DES Rivers Management and Protection Program and NH Fish and Game Department to develop an alternative that is sensitive to the brook and its associated fishery. **(Design/ Environment)**

2. The roadway embankment adjacent to Warren Brook shall be stabilized between approx. Sta. 628+00 and 635+00 by placing Class A stone fill (riprap) at a 1 ½:1 slope from the toe-of-slope to approximately 3 feet above the preconstruction 100-year water surface elevation (Q100). Above this point, a 1 ½:1 slope will be constructed with Class B stone fill and covered with humus and a seed mix to allow for revegetation and to enhance the naturalization of the embankment. **(Design/ Construction)**.

3. The roadway embankment adjacent to Warren Brook shall be stabilized between approx. Sta. 642+00 and 649+25 by placing Class A stone fill (riprap) at a 1 ½:1 slope from the toe-of-slope to approximately 3 feet above the Q100. Above this point, a 2:1 slope will be constructed and covered with humus, seed mix and landscaping to allow for revegetation and to enhance the naturalization of the embankment.

4. Reconstruct the northern roadway embankment between approx. Sta. 604+50 and 606+00 as well as 609+00 and 900+75 by placing Class B stone fill (riprap) at a 1 ½: 1 slope and covering it with humus and seed mix above the Q100 to allow for revegetation and to enhance the naturalization of the embankment. **(Design/ Construction)**.

5. The northern roadway embankment along NH Route 123 and NH Route 123A between approx. Sta. 606+25 and 900+75 will be covered above the Q100 with humus, seed mix and landscaping to allow for revegetation and to enhance the naturalization of the embankment. **(Design/ Construction)**.

Alstead 14540W

1. The western roadway embankment between approx. Sta. 907+50 and 910+50 will be reestablished using a Class B stone fill (riprap) at a 1 ½: 1 slope and covering with humus to allow for revegetation and to enhance the naturalization of the embankment. **(Design/ Environment/ Construction)**

2. All impacts to parcel 101 (Vilas Pool Property) shall be temporary and all work shall be completed during a period not to exceed 6 months **(Design/ Environment/ Construction)**.

3. The Department will hire an archaeologist qualified under 36 CFR 61 to monitor excavation in the vicinity of the former Tool Edge Factory located beneath the roadway surface between Sta. 907+00 and 912+00. Archaeological findings will be appropriately documented. **(Construction/ Environment)**

Exhibits